REMARKS

In this Amendment, Applicant has amended Claim 11 to rephrase certain expression and added new Claims 15 – 16 to further specify the embodiments of the present invention. It is respectfully submitted that no new matter has been introduced by the amended and added claims. Please note that the amendment does not raise new issue or require further search. Therefore, the amendment should be entered and considered. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the preceding amendments and the following comments.

REJECTIONS UNDER 35 U.S.C. § 103:

Claims 11 – 14 have been rejected under 35 U.S.C. § 103, as allegedly being obvious and unpatentable over Halliyal et al. (US 6,319,775), hereinafter Halliyal, in view of Walker (US 5,371,027), hereinafter Walker. Claims 11 – 13 have been rejected under 35 U.S.C. § 103, as allegedly being obvious and unpatentable over Chen et al. (US 2003/0232507), hereinafter Chen, in view of Walker.

Applicant traverses the rejection. It is respectfully submitted that the cited references fail to render the embodiments of the present invention as claim obvious. More specifically, the combination of Halliyal or Chen with Walker does not disclose all the limitations of the embodiments of the present invention as defined in Claims 11 – 14, especially the feature of "the gate dielectric layer with an increased electron trapping density has at least one kind of hetero element, other than Nitrogen."

The embodiments of the present invention as defined in Claims 11 – 14 are significantly different from Halliyal, which discloses an "ONO" EEPROM process including "first silicon oxide layer", "silicon nitride layer", "second silicon oxide layer", their related thermal CVD, thermal oxidation and thermal nitridation. Halliyal does not disclose or suggest any process to increase the electron trapping density. However, the

embodiments of the present invention as defined in Claims 11 – 14 include the feature of "the gate dielectric layer with an increased electron trapping density."

Similarly, Walker does not disclose or suggest this feature of "the gate dielectric layer with an increased electron trapping density." Walker focuses on the enhancement of tunneling current in oxide rather than the charge trapping capability. These two characters are completely different. According to Walker, "... the tunnelling effect is enhanced by implantation of a heavy, high-energy ion, for example As, into a comparatively thin poly layer of the oxide. During this, Si atoms are propelled from the polylayer into the oxide, so that the oxide is enriched with Si, which causes a major change in the tunnelling characteristics ..." (Abstract). Therefore, Walker does not teach or suggest "the gate dielectric layer with an increased electron trapping density." Without such motivation to combine Halliyal with Walker and reasonable expectation of success, there is no prima facie case of obviousness against the present application.

In addition, the disclosure of Chen focuses on a nitrogen plasma treatment process to prevent ONO damages from alter chemical processes. According to Chen, "the process involves exposing the exposed surface of the top layer of the multi-layer film to a plasma containing nitrogen radicals, to form a nitrided layer of oxide on the exposed surface" (Abstract). Applicant respectfully submits that it is incorrect to equalize the hetero elements having increased oxide bulk's electron trapping density in the present application to the nitrided surface treatment of Chen. In the embodiments of the present invention as defined in Claims 11 – 13, the hetero element exists in the gate oxide bulk, capable of storing electrons or electric charges. On the contrary, Chen discloses a plasma surface treatment for preventing exposed top ONO surface from damages where no feature of increased charge trapping density has been disclosed or suggested. Without such motivation to combine Chen with Walker and reasonable expectation of success, there is no prima facie case of obviousness against the present application.

In summary, nowhere in prior art has suggestion or incentive to combine Halliyal or Chen with Walker to achieve the invention as presently claimed. Even if they are

combined, they do not disclose or teach the invention as presently claimed. One of ordinary skilled in the art would not discern the present invention at the time of its invention. Therefore, the rejection under 35 U.S.C. § 103 has been overcome. Accordingly, withdrawal of the rejection under 35 U.S.C. § 103 is respectfully requested.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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